

ASSIGNMENT 2

PROBLEM STATEMENT

Deadline:

September 26th, 2014 11:59pm.

Submission instruction:

In your previous repository, add a new folder called as Assignment 2. Rest instructions remain the same. Remember you do not need to create a new repo. Use the same repo. Since it's the same repo, you don't need to give any rights to us. We already have it.

Description:

The objective of this assignment is to get you to practice a number of engineering and programming ideas:

1. Data conversion between Strings and Integers
2. Manipulating JTable
3. ArrayLists
4. If statements and range comparisons
5. One – to – Many relationship

Write a Swing application to manage a list of vital sign measurements taken over time for one patient. The vital sign values of interest are listed in the next section and their normal ranges are listed in the table attached at the bottom.

Your application should be able to capture the following information of a Patient:

1. Patient name – a simple string describing the name of the patients
2. Patient ID – a simple string describing the id of the patient
3. Age – a simple number describing the age of the patient
4. Primary doctor name – a simple string describing the name of the patient
5. Preferred pharmacy – a simple string describing the name of a pharmacy company
6. Vital sign history

Your application should be able to capture the following information of a VitalSign:

1. Respiratory rate
2. Heart rate
3. Systolic blood pressure
4. Weight in pounds
5. The timestamp of when the vital sign was captured

The user of your application should be able to do the following things:

1. Create a patient
2. Add many vital sign information of the created patient
3. View the information of the created patient together with an overview of his / her vital signs. The overview can be achieved using a table. The table should have two columns
 - a. Timestamp of when the vital sign was captured
 - b. Whether the vital sign is normal or not. If it is not normal according to the table attached at the bottom, display “Normal”, otherwise display “Abnormal”. A vital sign is considered normal only if all four of its key attributes are in the normal range.
4. View the detail information of a vital sign based on user’s selection from the table.
5. The user is pretty naughty and like to type random characters into text fields just to see if he/she can break your application. You need to guard your application against this kind of behaviors.

Things to consider:

There are many ways to implement this application. But you need try to think and figure out the “better way” of implementing it. Here are some questions you might want to ask yourself before implementing the assignment.

Noticed how a Patient will have many VitalSign associated with it? How are you going to achieve this?

Noticed you need to display whether a VitalSign is normal or not based on the rules described in the table below? How are you going to achieve this? When should you evaluate if it is normal or not? At the point of adding vital sign or at the point of displaying it.

VitalSign normal range table

Age Group	Respiratory Rate	Heart Rate	Systolic Blood Pressure	Weight in Pounds
<i>Toddler (1 – 3 years)</i>	20 – 30	80 – 130	80 – 110	22- 31
<i>Preschooler (4 – 5 years)</i>	20 – 30	80 – 120	80 – 110	31- 40
<i>School Age (6 – 12 years)</i>	20 – 30	70 – 110	80 – 120	41- 92
<i>Adolescent (13+ years)</i>	12 – 20	55 – 105	110 – 120	> 110